



Yokosuka Cruise Report

YK20-11C

Research on Time Reversal MIMO Acoustic Communication

Fukushima offshore

September 7, 2020 – September 16, 2020

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

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1. Cruise Information

Cruise ID: YK20-11C

Name of vessel: Yokosuka

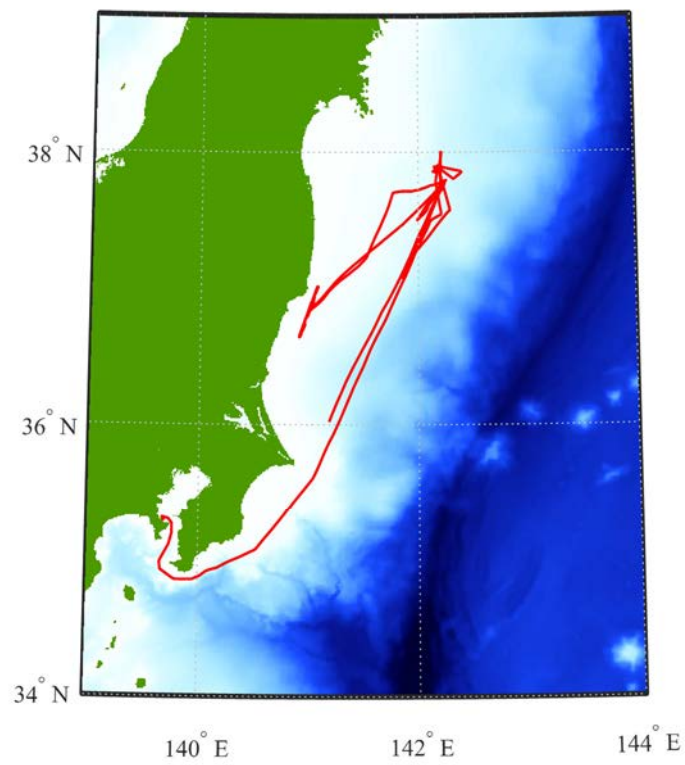
Title of the cruise: Research on time reversal MIMO acoustic communication

Cruise period: September 7, 2020 – September 16, 2020

Ports of departure / call / arrival: Yokosuka (JAMSTEC) – Yokosuka (JAMSTEC)

Research area: Fukushima offshore

Research Map



2. Researcher

Chief Scientist

Takuya SHIMURA [JAMSTEC]

Science Party

Yoshitaka WATANAB [JAMSTEC]

Yukihiro KIDA [JAMSTEC]

Mitsuyasu DEGUCHI [JAMSTEC]

Seiji KUROSAKI [Nippoe Denshi Ltd.]

Takeshi NISHIJIMA [Nippoe Denshi Ltd.]

Shuichiro TERADA [Shoshin Corp.]

Yoshiyuki TAKEYASU [Shoshin Corp.]

3. Observation

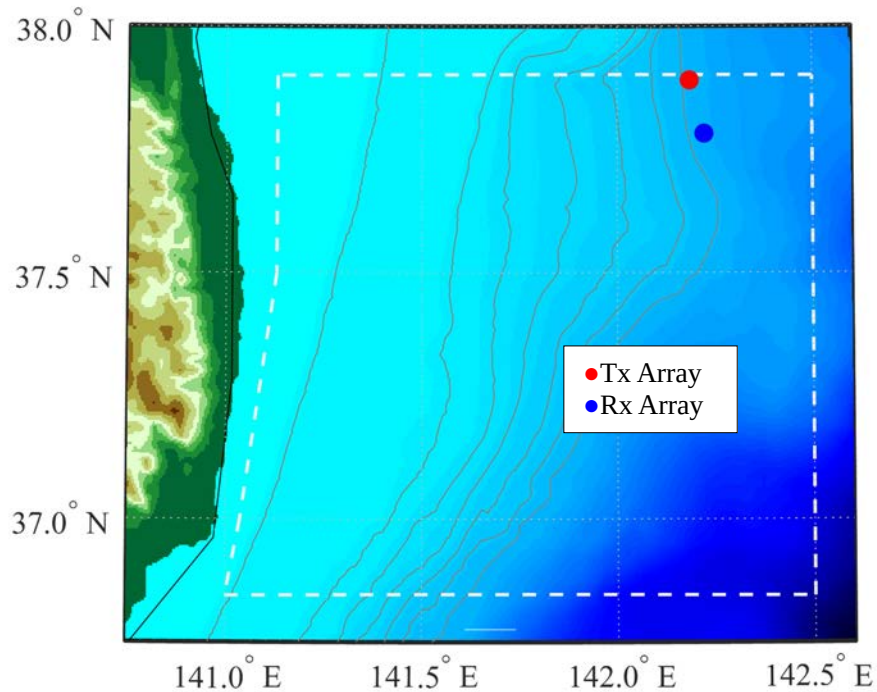
(1) Objectives

This cruise was a part of the research on MIMO acoustic communication using time reversal. The experiments were carried out in the area of water depth from 100 from 400 m off the coast of Fukushima. The characteristic of acoustic channel in this area was measured in the previous cruise, KR20-E04C/YK20-E03C. In this cruise, a four-channel transmitter array and twenty-four-channel receiver array were moored and MIMO communication experiments were carried out.

(2) Cruise log

2020/9/7	Departure from Yokosuka, Evacuation due to abysmal weather
2020/9/8	Evacuation due to abysmal weather
2020/9/9	Deployment of Tx array (mooring)
2020/9/10	Deployment of Rx array (suspending), Recovery of Tx array
2020/9/11	Deployment of Tx and Rx arrays (mooring)
2020/9/12	Recovery of Tx array, Evacuation due to abysmal weather
2020/9/13	Evacuation due to abysmal weather
2020/9/14	Evacuation due to abysmal weather
2020/9/16	Recovery of Rx array
2020/9/17	Arrival at Yokosuka

(3) Measurements



	Transmitter		Receiver Array	
2020/09/09	37°53.48' N	141°11.18' E		
2020/09/11	37°53.48' N	141°11.18' E	37°46.96' N	141°13.41' E

4. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.

This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.

Users of information on this report are requested to submit Publication Report to JAMSTEC.

<http://www.godac.jamstec.go.jp/darwin/explain/1/e#report>

E-mail: submit-rv-cruise@jamstec.go.jp